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RECEIVED

AUG 14 1998

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

August 14, 1998

VIA HAND DELIVERY

Magalie Salas, Esq.
Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, DC 20054

Re: ET Docket No. 94-124
Petition for Reconsideration of the National Radio Astronomy Observatory

Dear Ms. Salas:

On behalf of the National Radio Astronomy Observatory ("NRAO"), and pursuant to Section 1.429(a) of the Commission's rules, enclosed is an original and three copies of a Petition For Reconsideration of the Commission's Third Report & Order in ET Docket No. 94-124, released July 15, 1998.

If there are any questions regarding this matter, please contact myself or counsel for NRAO, Christopher J. Reynolds (410-535-9220).

Sincerely,

Paul J. Feldman, Esq.

PJF/jr
Enclosures
cc: Christopher J. Reynolds, Esq.

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BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
Amendment of Parts 2, 15, and 97 of the Commission's Rules to Permit Use of Radio Frequencies Above 40 GHz for New Radio Applications	)	ET Docket No. 94-124
	)	RM-8308
	)	
	)	

To: The Commission

PETITION FOR RECONSIDERATION

The National Radio Astronomy Observatory (NRAO), by its attorneys, hereby requests reconsideration of the Commission's Third Report and Order (the "Order") in this proceeding released July 15, 1998. In support whereof, the following is shown:

1. The NRAO was established in 1957 to provide sophisticated telescopes and related facilities to radio astronomers affiliated with universities, other observatories, government laboratories and private industry who might otherwise not have these resources available to them. Under the terms of a cooperative agreement with the National Science Foundation, the NRAO facilities are operated by a nonprofit corporation, Associated Universities, Inc., which was founded by nine universities: Columbia, Cornell, Harvard, Johns Hopkins, Massachusetts Institute of Technology, Pennsylvania, Princeton, Rochester and Yale. The NRAO currently oversees three radio astronomy observatories in Green Bank, West Virginia, Socorro, New Mexico and on Kitt Peak near Tucson, Arizona.

2. Three major telescope systems are being operated at Green Bank and a $75 million telescope funded by Congress to replace one which recently collapsed which will be operational in 1999. These are located within the National Radio Quiet Zone which was designed to minimize interference to radio astronomy research conducted there. At Socorro, NRAO operates a Very Long Baseline Array (VLBA) consisting of ten

automated 25-meter radio telescope antennas at ten sites across the United States and its territories, from Mauna Kea, Hawaii to St. Croix, Virgin Islands. Data from each receiver are combined in a specially designed digital computer system allowing the synthesis of a single radio telescope 8000 kilometers (5000 miles) in diameter, the largest dedicated telescope in the world. An additional facility at west central New Mexico, the Very Large Array (VLA), consists of twenty-seven automated 25-meter radio telescope antennas. Like the VLBA, data are combined to allow synthesis of a single radio telescope. At Kitt Peak, the NRAO operates a millimeter-wave telescope 12 meters in diameter. NRAO is also designing the Millimeter Wave Array (MMA), a major millimeter wavelength interferometric observatory.

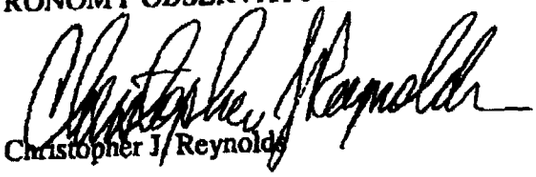
3. The observations made with many of these telescopes will likely be significantly degraded if the power density limits proposed by the Commission in the Order are instituted and the NRAO is thus an interested party within the meaning of Section 1.429(a) of the Commission's Rules. In the Order, the Commission adopted a spurious emission limit of 1000 pW/cm^2, as measured at 3 meters, for unlicensed millimeter wave transmitters that operate in the 76-77 GHz band, rather than the 2 pW/cm^2 limit proposed by the National Academy of Sciences through the Committee on Radio Frequencies (CORF). The bases for the Commission's determination were, first, that the Commission relied on the recommendation of the National Telecommunications and Information Administration (NTIA) that the 1000 pW/cm^2 limit was "sufficient to provide adequate protection to radio astronomy operations in the 217-231 GHz band." Second, the Commission asserted its belief that "emissions in this frequency range tend to be highly focused and directional." The Commission also believed that "[g]iven that radio astronomy equipment discriminates against off-beam signals and that vehicle radars will be used when in motion, ... there is little likelihood of interference to radio astronomy operations." Order at ¶ 13.

4. The Comments of CORF, which need not be repeated here, demonstrated the importance of the 217-231 GHz band, allocated exclusively for radio astronomy research, and that the need for protection due to the demonstrated probability of third harmonic emissions interference was great. With the proximity of vehicular traffic to the NRAO observatories, some of which are popular sites for visitors, the likelihood of harmful interference is greater than what the Commission appears to have been willing to admit. Nowhere does the Commission address the specific concerns or calculations set forth by CORF, nor does it explain the bases of its "beliefs" in rejecting CORF's proposed limits in favor of those recommended by NTIA. Such a failure to address the key arguments of the parties most likely to be negatively impacted by the Commission's action is arbitrary

and capricious and does not constitute reasoned decision-making. For these reasons, NRAO urges the FCC to reconsider the liberal limits it adopted in the Order and to adopt the more restrictive limits supported by CORF in order to protect the use of the 217-231 GHz band by radio astronomers.

Respectfully submitted,

NATIONAL RADIO
ASTRONOMY OBSERVATORY

By: 
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August 14, 1998